

Falcons from Sardinia which can hardly be any thing but a new species; for they differ from every other Peregrine which I have ever seen from Europe, and more closely approach the southern forms *F. melanogenys* and *F. nigriceps*. The Sardinian birds, however, differ from these as well as the common Peregrine in the very strongly marked oval or tear-shaped spots on the chest, and the very broad and closely marked bars on the breast. They approach *F. melanogenys* in having a greater extent of black on the ear-coverts, which nearly meets the cheek-stripe along the whole of its length. Both specimens are fully adult females, and agree entirely; they were shot by Mr. Brooke in April 1869 and April 1871 respectively. I have no doubt that the characters above mentioned will be found to be constant, and therefore propose to describe the Sardinian bird as

Falco Brookei, sp. n.

F. similis F. peregrino, sed statura paullo minore, facie laterali tota nigricante, et pectore latissime nigro transfasciato distinguendus.

Hab. Sardinia (*A. B. Brooke*).

Mr. Brooke has very kindly presented one of the typical specimens to the national collection; so that the species can be examined by any one visiting the British Museum. The measurements of *F. Brookei* (in skin) as compared with *F. peregrinus* are as follows:—

	Long. tot.	culm.	alæ.	caudæ.	tarsi.
<i>F. peregrinus</i> , ♀ ad.....	19·0	1·45	13·8	7·6	2·15
<i>F. Brookei</i> , ♀ ad.....	17·0	1·35	13·5	7·0	2·00

V.—Notes on the Longicorn Coleoptera of Tropical America.

By H. W. BATES, Esq., F.L.S.

Subfamily RHINOTRAGINÆ.

The “*groupes*,” corresponding to our subfamilies, under which Lacordaire classed the genera of Longicorns, and of which he established about eighty in the family Cerambycidae alone, are seldom distinguished by definite group-characters. The rule seems to be that in each “*groupe*” modifications of form appear which do not occur in the same conjunction in any other; but every single modification is liable to disappear in some members of the “*groupe*.” Thus there is a looseness and uncertainty of definition in the classification of this family which cannot be agreeable to rigid systematists; but they are

inevitable, and the more attentively the Longicorns are studied the more hopeless rigid definitions of genera and subfamilies appear.

The *Rhinotraginæ* are a subfamily of the same section of the Cerambycidae to which the familiar genera *Callichroma*, *Necydalis*, &c. belong, *i. e.* having finely faceted eyes. They are remarkable for the very general abbreviation of the elytra in the species, and the mimetic resemblances that many of them bear to wasps, bees, Ichneumonidæ, and so forth—a resemblance which is much aided by the subrudimentary condition of the elytra and the prevailing style of coloration. In the imago state they frequent flowers, in company with the Hymenoptera many of them resemble, and are very nimble fliers, probably in consequence of the abbreviation of the elytra and great development of the membranous wings. An almost universal character of the group is the large volume of the eyes, especially of the lower lobes, which in the males nearly meet in front: this forms the nearest approach to an exclusive character of the group; but it disappears in some few species. The head, too, is very generally elongated below the eyes, forming a muzzle; but this character exists in several other subfamilies of Cerambycidae. The palpi are short, and their terminal joints nearly cylindrical or cylindric-ovate, truncated at the apex. The antennæ are almost always more or less serrated from the sixth joint; and the third to sixth joints are furnished with setæ on their outer sides. The thorax is cylindrical or ovate, always unarmed at the sides. The prosternum forms a distinct, though narrow, level plate between the anterior coxæ; and the episterna of the metasternum are always triangular and very broad in front. The anterior coxæ are generally obliquely exerted; but this is an inconstant character.

In deciding whether a Cerambycid with finely faceted eyes belongs to this group or not, the characters chiefly to be looked to are (1) the volume of the lower lobe of the eyes and the extent to which this has become frontal, (2) the presence of a distinct prosternal process, and (3) the prolongation of the head below the eyes. Species in which the eyes are lateral and the prosternal process narrow or obsolete are either *Necydalinæ* or *Molorchinæ*. The abbreviation of the elytra is not an essential character. The triangular shape of the metasternal episterna ought, however, I think, to be considered a *sine quâ non*; this would exclude *Trichomesia*, an Australian genus which Lacordaire places in the "groupe," and which is the only form in it not belonging to Tropical America.

Although so forbidding to the pure systematist, the *Rhinotraginæ* are full of interest to the general naturalist, on account

of their mimetic disguises and the beautiful illustrations they offer of the mode in which divergent modifications occur in nature. For example, it is most instructive to observe, in forms so very closely allied, that whilst some species have rudimentary elytra, ample wings, and wasp-like bodies, or bee-like hind tibiæ (such as many of the species of *Odontocera*, *Charis*, and *Tomopterus*), others have elytra developed to the opposite extreme, and, aided by colours and facies, become the mimetic analogues of various Coleoptera—such as *Oxylymma* (resembling Galerucidæ), *Echmutes* (resembling Lycidæ), and *Erythroplatys* (resembling Hispidæ). The lesson plainly taught here, to those who believe in the origin of species by natural variation and selection, is that the *Rhinotraginiæ* have varied in many directions, and that, a protective disguise of one kind or other being necessary to the species, the variations have been gradually drawn out in many different directions, according as they resembled some object at hand which it was advantageous to resemble. In the present stage it cannot be said that the species are remarkable for variability in the parts of their structure involved in the adaptations here mentioned: but they are generally insects of great rarity; and wherever a large number of examples are at hand (e. g. *Acyphoderes aurentus*, *femoratus*, and *hirtipes*, *Ommata (Agaone) notabilis*), there is a large amount of variation in general form and colour. If, however, we look at the differences between very closely allied species the most abrupt changes are seen—such, for instance, as those between *Odontocera fasciata* (resembling a wasp) and *O. compressipes* (resembling a bee, with pollen-gathering apparatus to the hind tibiæ). In fact the abruptness with which important parts of structure change from species to species renders the definition of genera impossible in this group; almost every species offers structural characters sufficient in amount to render generic separation plausible.

Genus OXYLYMMA, Pascoe.

Pascoe, Trans. Ent. Soc. ser. 2, v. p. 21; Lacord. Genera, vol. viii. p. 500.

1. *Oxylymma lepida*, Pascoe, l. c. p. 22, pl. ii. f. 3.

Ega, Amazons.

2. *Oxylymma telephorina*, Bates.

Oxylymma telephorina, Bates, Trans. Ent. Soc. 1870, p. 316.

Ega, Amazons.

3. *Oxylymma gibbicollis*, n. sp.

O. flavo-testacea, erecte pilosa; occipite, articulis antennarum 2^o-5^{um}

vittaque angusta laterali et suturali elytrorum, et metasterno, nigris; thorace antice valde convexo, postice abrupte depresso, rufo, maculis fuscis. Long. 4 lin.

Bahia (*coll. W. W. Saunders*).

Head with much-elongated muzzle, testaceous yellow, shining; occiput and neck black. Antennæ with basal and fifth and sixth joints yellowish, streaked with black exteriorly, second to fourth joints shining black, rest yellowish. Thorax strongly rounded on the sides, disk anteriorly gibbous, base strongly depressed and constricted; reddish, with four dusky triangular spots on the anterior part, which spots have numerous large circular punctures, the rest of the surface being smooth. Elytra depressed, pale yellow, clothed with long, erect, pale hairs, apex briefly sinuate-truncate, with acute angles to the truncature; surface closely punctured. Body beneath and legs waxy yellow, shining; metasternum black.

This species has a close resemblance to a species of *Diabrotica* (fam. Galerucidæ).

Genus RHINOTRAGUS, Germar.

Germar, *Ins. Sp. Nov.* p. 513; Lacord. *Genera*, vol. viii. p. 500.

1. *Rhinotragus dorsiger*, Germar, *l. c.*

Var. *Rhinotragus marginatus*, Perty, *Del. An. Art. Bras.* p. 94, t. 19. f. 1.

R. anceps, Newm. *Ent. Mag.* v. p. 495.

S. Brazil.

R. marginatus is considered a distinct species by some entomologists.

2. *Rhinotragus apicalis*, Guérin-Ménéville.

Rhinotragus apicalis, Guérin-Ménév. *Icon. R. A.* p. 236.

Bolivia. Prov. Paraná, Brazil.

3. *Rhinotragus analis*, Serville.

Rhinotragus analis, Serv. *Ann. Soc. Ent. Fr.* 1833, p. 550.

S. Brazil.

4. *Rhinotragus festivus*, Perty.

Rhinotragus festivus, Perty, *Del. An. Art.* p. 94, t. 19. f. 2.

R. suturalis, Serv. *Ann. Soc. Fr.* 1833, p. 550.

S. Brazil.

5. *Rhinotragus trilineatus*, White.

Rhinotragus trilineatus, White, *Cat. Long. Col. Brit. Mus.* p.

R. Amazons.

Genus ERYTHROPLATYS, White.

White, Cat. Long. Col. Brit. Mus. p. 201.

1. *Erythroplatys corallifer*, White, *l. c.* p. 202, pl. v. f. 2.

Santarem, Amazons, on flowers. Resembles to deception the Hispid *Cephalodonta spinipes*.

2. *Erythroplatys rugosus*, Lucas.

Rhinotragus rugosus, Lucas, Voyage de Castelnau, Entomologie, p. 182, pl. xii. f. 7.

Interior of Brazil.

3. ?*Erythroplatys Lucasii*, Thomson.

Rhinotragus Lucasii, Thoms. Classif. des Céramb. p. 178.

Interior of Guiana.

Genus ÆCHIMUTES, Bates.

Bates, Entom. Monthly Mag. iv. p. 23 (1867).

Syn. *Ornistomus*, Thoms. Syst. Céramb. p. 166 (1864).

The differences between these two genera are too small to warrant their separation. Thomson's genus is not mentioned in Lacordaire's great work; but there can be no doubt that this is its right place, and not in the neighbourhood of *Pteroplatus*, with which it was possibly confounded by Lacordaire. The species of the genera here united, although differing very greatly in size and in the form of the apex of the elytra, both resemble the Lycidæ. I hesitate to admit M. Thomson's name, as it may prove, when its faulty grammatical construction is corrected (as it is sure to be by subsequent authors), to have been already employed in zoology.

1. *Æchmutes bicinctus*, Thomson.

Ornistomus bicinctus, Thoms., *l. c.* p. 167.

S. Brazil.

2. *Æchmutes lycoides*, Bates.

Æchmutes lycoides, Bates, Trans. Ent. Soc. 1870, p. 332.

Ega, Amazons.

Genus OREGOSTOMA, Serville.

Serv. Ann. Soc. Fr. 1833, p. 551; Lacord. Genera, vol. viii. p. 501.

1. *Oregostoma rubricorne*, Serv. *l. c.*

Rhinotragus coccineus, Guérin-Méneville. Icon. R. A., Ins. pl. 44. f. 7.

S. Brazil.

2. *Oregostoma luridum*, Klug.

Stenopterus luridus, Klug, Entom. Bras. Spec. alter. p. 470, pl. 44. f. 3.
S. Brazil.

Genus OMMATA, White.

White, Long. Col. Brit. Mus. p. 194; Lacord. Genera, vol. viii. p. 502.

White founded the genus *Ommata* on a species from Venezuela, distinguished by its very long antennæ, thickened and not serrated towards the apex; with this character are associated vitreous narrowed elytra and tufted hind tibiæ. Lacordaire considers these features of less generic importance than the normal relative forms of the metasternum and abdomen and the exerted anterior coxæ. In these latter points White's insect agrees with a large number of species of the most diversified forms and colours; and an examination of very copious material has not yielded me any more definite generic distinctions than those mentioned by Lacordaire. It is true that the type, *Ommata elegans*, and a second species that may be associated with it, *O. Maia* of Newman, differ from all the other *Ommata* (sensu Lacord.) in their vitreous elytral surface; but *O. clavicornis* and some other species with opaque elytra come very close to *O. Maia*, and the genus would have to be split up into a large number of smaller genera if *Ommata* were to be restricted to the two species here named. The genus comprehends a series of species which for the most part are at once distinguishable by their facies from *Odontocera*; and in cases of doubt I have treated the opaque and punctured elytra as a differential character.

The genus *Agaone*, Pascoe, which I formerly adopted, I find on the examination of further material to be quite untenable; or if it be maintained, it must be restricted to the typical species, *A. notabilis*.

I. *Legs long and slender; middle femora gradually and moderately clavate.*

A. *Elytra entire or nearly so.* (Phænissa.)

1. *Ommata* (*Phænissa*) *nigripes*, Serville.

Oregostoma nigripes, Serv. Ann. Soc. Ent. Fr. 1833, p. 552.

S. Brazil.

2. *Ommata* (*Phænissa*) *bipartita*, n. sp.

O. nigripede gracilior, thorace magis cylindrico, elytrorum plus quam

dimidio apicali nigro; nigra, thorace et fere dimidio basali elytrorum coccineis. Long. $4\frac{1}{2}$ – $5\frac{1}{2}$ lin. ♀.

Prov. Paraná, Brazil (*coll. W. W. Saunders and H. W. Bates*).

Very closely allied to *O. nigripes* (Serv.). Smaller and narrower, thorax narrower and more regularly cylindrical, the black portion of the elytra extending rather more than halfway towards the base. The head is coarsely scabrous-punctate as in *O. nigripes*; the antennæ are very slightly thickened towards the tips, with the third to fifth joints linear and the following moderately serrate. The thorax and elytra are closely reticulate-punctate, the latter more deeply so than in *O. nigripes*; they are slightly narrowed in the middle, and reach the apex of the abdomen, with the tips broadly and obliquely truncate and the sutural angle briefly spinose. The abdomen is dark blue and shining.

3. *Ommata (Phænissa) punicea*, Newman.

Rhinotragus puniceus, Newm. Entom. Mag. v. p. 495.

S. Brazil.

There are many examples in the British-Museum collection, all distinguished from *O. nigripes* by their slenderer shape and two small black spots placed transversely on the disk of the thorax.

4. *Ommata (Phænissa?) discoidea*, Serville.

Oregostoma discoidea, Serv. Ann. Soc. Ent. Fr. 1833, p. 552.

S. Brazil.

A A. *Elytra moderately narrowed posteriorly.*

a. *Elytra scarcely abbreviated, apex truncated.* (Chrysaëthe.)

5. *Ommata atrata*, Bates.

Ommata atrata, Bates, Trans. Ent. Soc. 1872, p. 184.

S. Brazil.

6. *Ommata asperiventris*, Bates.

Ommata asperiventris, Bates, Trans. Ent. Soc. 1872, p. 184.

S. Brazil.

7. *Ommata cyanipennis*, Bates.

Ommata cyanipennis, Bates, Trans. Ent. Soc. 1872, p. 184.

Chontales, Nicaragua.

8. *Ommata aurata*, Bates.

Ommata aurata, Bates, Trans. Ent. Soc. 1870, p. 320.

R. Amazons.

9. *Ommata smaragdina*, Bates.

Ommata smaragdina, Bates, Trans. Ent. Soc. 1870, p. 320.

R. Amazons.

10. *Ommata Beltiana*, Bates.

Ommata Beltiana, Bates, Trans. Ent. Soc. 1872, p. 184.

Chontales, Nicaragua.

aa. *Elytra narrowed and rounded at the tip; antennæ elongated and thickened at apex, not serrated.*

* *Elytra shining or vitreous. (Ommata, typical.)*

The elytra have an elevated line along their posterior part, parallel to the outer margin.

11. *Ommata elegans*, White.

Ommata elegans, White, Cat. Long. Col. Brit. Mus. p. 194, pl. v. f. 6.

Venezuela.

12. *Ommata Maia*, Newman.

Odontocera Maia, Newman, Entomologist, p. 92.

Rio Janeiro, Brazil. Not uncommon in collections.

I have seen a third species of this group in Dr. Baden's collection, in which the antennæ are half as long again as the body; but the specimen is in too imperfect a state for description.

** *Elytra opaque. (Rhopalessa.)*

13. *Ommata clavicornis*, n. sp.

O. gracilis, nigra, longe erecte pubescens, thorace (marginibus antico et postico nigris exceptis) sanguineo, breviter cylindrico, polito, plagiatis punctato; elytris integris, crebre punctatis; antennis elongatis, articulis 3^o-6^{um} linearibus, 9^o-11^{um} valde dilatatis, leviter serratis. Long. 4 lin. ♀.

Novo Friburg, Rio Janeiro (coll. Dr. Baden and H. W. Bates).

Allied to the typical species, *O. elegans*, in the form of the antennæ, but differing in the elytra being very nearly entire and without vitreous polish on their surface. The head has a short muzzle, the eyes (female) widely distant, and the forehead coarsely but sparsely punctured, with silvery pubescence. The sixth to eighth antennal joints are pale at the base. The thorax is short, smoothly convex and shining, with moderately small punctures in patches. The elytra are very little narrowed, and reach to the middle of the pygidium, their apex being

very obtusely truncated, and their surface closely punctate-rugose and clothed with curled whitish hairs. The under surface is clothed with similar hairs. The legs are slender, the thighs somewhat suddenly clavate, and the hind legs distinctly elongated; their colour is pitchy, with the base of the hind thighs pale testaceous.

14. *Ommata tenuis*, Burmeister.

Rhinotragus tenuis, Burmeister, Stettin. ent. Zeit. 1865, p. 173.

Paraná.

Burmeister describes the antennæ as strongly thickened at the tip and the elytra punctured and opaque. As he does not mention the form of the elytra, and places the species in *Rhinotragus*, it is to be inferred they are subentire and perhaps truncated.

II. *Legs slender; middle femora abruptly but not very broadly clavate; elytra with sides subparallel, apex truncated.* (Eclipta.)

A. *Elytra abbreviated.*

15. *Ommata Eirene*, Newman.

Odontocera Eirene, Newman, Entomologist, p. 92.

S. Brazil.

The elytra reach the middle of the third abdominal segment, and are obtusely truncated; the antennæ are thickened and serrate from the seventh joint.

There is a sexual difference in coloration. The female, described by Newman, has unicolorous greenish-black elytra and white hind tarsi; the male has a pale testaceous vitta near the suture, extending from the base to two thirds the length of the elytra, and the hind tarsi are black with cinereous hairs.

16. *Ommata castanea*, n. sp.

O. linearis, breviter pubescens, antennis basi pedibusque nigris; elytris abbreviatis ad suturam dehiscentibus. Long. 5 lin. ♀.

Prov. Rio Janeiro, Brazil (*coll. Dr. Baden and H. W. Bates*).

Head thickly punctured, except the lower part of the forehead; muzzle elongated, not narrowed. Antennæ (female) three fourths the length of the body, thickened but scarcely serrate towards the tips, joints 3 to 6 linear; basal joints black, apical pale tawny. Thorax elongate cylindrical, densely reticulate-punctate. Elytra considerably narrowed from near the base, but parallel afterwards to the apex, which is truncated and scarcely reaches the base of the penultimate ventral

segment; they are widely divergent at the suture. The legs are black, the hind pair much elongated, with distinctly clavate femora.

17. *Ommata thoracica*, n. sp.

O. elongata, angusta, plumbeo-nigra, cano breviter pubescens, thorace angusto, rufo, crebre reticulato-punctato; elytris paulo abbreviatis, apice recte truncatis. Long. $4\frac{1}{2}$ lin. ♀.

Prov. Paraná et Novo Friburg, Rio Janeiro (coll. W. W. Saunders, Dr. Baden, and H. W. Bates).

A slender, narrow species, with elytra very moderately narrowed and parallel from a little beyond the base, and reaching a little beyond the base of the penultimate segment, their apices sharply truncate, and their suture slightly gaping. Head rugose-punctate, with much-elongated muzzle. Antennæ (female) two thirds the length of the body, black; third to sixth joints linear, but rather short and stout, the following a little thickened and but slightly serrated. Thorax elongate, convex, uneven; surface entirely covered with shallow circular pits, leaving narrow reticulated interstices. Elytra closely punctured. Legs rather slender, shining black; thighs somewhat abruptly clavate, hind legs elongated.

I have seen this species labelled *O. collaris* of Serv.; but Serville says this species has the elytra "acuminées postérieurement," which character applies neither to this nor the following similarly coloured species.

18. *Ommata flavicollis*, n. sp.

O. postice angustata, nigra, thorace flavo-aurantiaco, opaco, haud distincte punctato; elytris abbreviatis, versus apicem paulo angustatis, apice truncatis. Long. 4 lin. ♂ ♀.

Prov. Paraná, Brazil (coll. W. W. Saunders and H. W. Bates).

Closely allied to the preceding, but the antennæ shorter and the elytra not reaching the apex of the antepenultimate ventral segment. Head coarsely punctured; muzzle much elongated; eyes (male) almost contiguous, (female) separated by only a short distance. Antennæ scarcely two thirds the length of the body; third to sixth joints linear but rather thick, and fifth and sixth a little widened at apex; they are black, but in the male the seventh to eleventh joints are pale at the base. Thorax opaque, orange-yellow, without visible punctuation. Elytra very closely subconfluent-punctate. The legs are moderately slender, the thighs elongate-clavate.

19. *Ommata Eunomia*, Newman.

Odontocera Eunomia, Newman, Entomologist, p. 92.

S. Brazil.

Described by Newman from a single specimen. In colours the species is variable—the upper surface of the thorax being either wholly black, slightly embrowned in the centre, or wholly fulvous; and the yellow vitta of the elytra sometimes extends to the suture, and is sometimes confined to the disk, or wholly wanting. Throughout all the varieties, however, the front of the head, the four anterior femora, and the basal half of the hind pair are bright fulvous. The elytra scarcely pass the base of the antepenultimate segment, and are sharply sinuate-truncate at the apex. The antennæ have the third to sixth joints linear; and the rest are not thickened, and only slightly serrated. The thorax is somewhat irregularly reticulate-punctate. The elytra are closely punctate and obscured by soft incumbent silky pile.

20. *Ommata brachialis*, n. sp.

O. gracilis, fusco-nigra, infra dense cano pubescens; femoribus anticis fulvis, femoribus posticis basi albo-testaceis. Long. 3-4 lin. ♂.

Prov. Rio Janeiro, Brazil (*coll. Dr. Baden and H. W. Bates*).

Very closely allied to *O. Eunomia*. Elytra more elongate, passing the base of the penultimate segment, and obtusely (not sinuate) truncate at the apex. The head is wholly black; and the anterior thighs only are fulvous, the extreme base of the other pairs being whitish. The eyes (male) are separated by a narrow space on the forehead. The antennæ are three fourths the length of the body, and thickened towards the apex; they are dull black, with bases of seventh to eleventh joints fulvous; the third to fifth joints are long, slender, and linear. The thorax is narrow, and reticulate-punctate in three longitudinal patches, the interstices being scarcely punctured. The elytra are closely punctured. The legs are long, especially the hind pair, and the thighs distinctly clavate.

21. *Ommata monostigma*, Bates.

Agaone monostigma, Bates, Trans. Ent. Soc. 1869, p. 384.

Chontales, Nicaragua.

22. *Ommata liturifera*, n. sp.

O. linearis, angusta, fulvo-testacea; occipite lituraque magna pro-

thoracis (H simulante) nigris; elytris paulo abbreviatis, late truncatis, crebre punctatis. Long. $2\frac{3}{4}$ -4 lin. ♂ ♀.

Prov. Rio Janeiro, Brazil (coll. Dr. Baden and H. W. Bates).

Head tawny testaceous; occiput, and in female a frontal streak, black; coarsely punctured; muzzle moderately elongated, not narrowed; eyes in male contiguous in front, in female widely distant. Antennæ rather short, filiform, serrate, joints 3-5 linear; tawny testaceous, tips of joints brown. Thorax cylindrical, a little constricted in front and behind, very coarsely punctured; tawny, with two broad vittæ on the disk, joined in the middle by a fascia, black, a black vitta also on each flank. Elytra reaching to the middle of the penultimate ventral segment, moderately narrowed from near the base and parallel, apex sharply truncate; colour light tawny brown, thickly but separately punctured. Body beneath yellowish, breast and middle of abdomen black. Legs slender, thighs rather abruptly clavate, hind legs moderately elongate; testaceous yellow, femoral clava ringed with black, tibiæ and tarsi also black.

A A. *Elytra nearly reaching the tip of the abdomen.*

23. *Ommata prolixa*, n. sp.

O. elongata, angusta, setosa, testaceo-rufa; capite (epistomate excepto), maculis thoracis duabus dorsalibus alteraque utrinque elytrorum humerali, pectore et pedibus nigris, femoribus basi albo-testaceis; elytris pallide fuscis postice obscurioribus; antennis modice elongatis apice vix incrassatis, nigris, articulis basi pallidis; thorace antice angustato, supra inæquali, grosse disperse punctato; elytris subintegris, crebre punctatis, apice oblique truncatis. Long. 4 lin. ♀.

Prov. Paraná, Brazil (coll. W. W. Saunders).

Closely allied to *O. cribripennis*, but more elongated, especially the elytra. The eyes (female) are more distant on the forehead, and the space between them is wide, plane, and (like the rest of the head) coarsely punctured. The antennæ have the third to fifth joints linear, and the following very gradually thickened, but not produced, at their inner apical angles. The hind legs are very little elongated, and the thighs moderately clubbed.

24. *Ommata lanuginosa*, n. sp.

O. linearis, fulvo-testacea, aureo breviter pubescens, opaca; occipite, thoracis disco femoribusque (partim) nigris; antennis filiformibus, articulis 7^o-10^{um} vix serratis haud incrassatis; thorace cylindrico, supra longitudinaliter biimpresso, reticulato-punctato; elytris

vix abbreviatis, acute truncatis, fulvo-fuscis, creberrime punctatis. Long. 4 lin. ♂.

Prov. Rio Janeiro (coll. Dr. Baden).

Opaque, clothed with a fine incumbent golden pile, short on the elytra, but longer and denser on the sides of the thorax, on the breast, and in the middle of the abdominal segments. The head is tawny testaceous, with the crown and occiput and part of the epistome black; the eyes (male) do not reach the median line; the muzzle is much elongated. The antennæ are dull tawny brown. The thorax is cylindrical, almost bisulcate along the disk, closely reticulate-punctate, with the whole disk dull black, and margins (like the under surface) tawny testaceous. The elytra reach the base of the terminal segment and are sharply sinuate-truncate; their surface is very regularly and closely punctured and opaque. The legs are moderately slender, the femora rather abruptly but not thickly clavate, and the first joint of the hind tarsi is equal in length to the remaining three; the femora and tibiæ are indistinctly clouded with blackish.

25. *Ommata cribripennis*, n. sp.

O. linearis, angusta, setosa, melleo-flava; occipite supra maculaque basali pronoti nigris; antennis apicem versus vix incrassatis, nigris, scapo infra articulisque 3^o-10^{um} basi melleo-flavis; elytris pallide fuscis, subintegris, crebre sed discrete grosse punctatis, apice oblique truncatis; pedibus posticis elongatis, femoribus omnibus clavatis. Long. 3 lin. ♂ ♀.

Prov. Paraná, Brazil (coll. W. W. Saunders and H. W. Bates).

Closely allied to *O. (Agaone) malthinoïdes* (Bates), but the elytra less attenuated than in that species; in fact these organs are entire, with the exception of the narrowness of the epipleuræ from a little beyond the base, and they leave only the tip of the pygidium exposed. The eyes of the male do not approach so closely on the forehead as in the allied species. The third to fifth antennal joints are linear, and the rest are only very slightly produced at their inner apical angles. The thorax is cylindrical and very coarsely, but irregularly and not closely, punctured. The legs are clear honey-yellow, with the exception of a brown spot at the apex of the hind femora.

26. *Ommata erythrodera*, n. sp.

O. clavicorni simillima, differt antennis brevibus gracilibus, articulis 6^o-11^{um} basi flavis. Linearis, fusco-nigra nitida, sparsim pubescens; thorace cylindrico, angusto, supra convexo, paulo inæquali, *Ann. & Mag. N. Hist.* Ser. 4. Vol. xi. 3

grossissime sparsim punctato, læte rufo nitido, marginibus anticis et posticis nigris; elytris vix abbreviatis, acute truncatis, nigro-fuscis, passim grosse regulariter punctatis, nitidis; femoribus sub-abrupte haud fortiter clavatis, basi albis. Long. 4 lin. ♀.

Novo Friburg, Rio Janeiro (*coll. Dr. Baden*).

Deceptively similar to *O. clavicornis* in general form, colour, and in the form and proportions of the legs; but differs at once in the moderately short slender antennæ, ringed with pale testaceous at the base of joints 6 to 11; this character would bring it into a different genus were the antennæ taken as guides. The head is shining black, regularly punctured, with much longer muzzle than in *O. clavicornis* and not pubescent; the space between the eyes on the front (female) is quite plane and very moderate for this sex. The elytra reach beyond the base of the terminal segment and are broadly and subsinuately truncate; their surface is shining, free from incumbent pubescence, and covered with separate punctures decidedly larger than those of *O. clavicornis*; in shape they are parallel-sided from after the base. The underside of the body is shining black, scantily clothed with grey pubescence. The basal joint of the posterior tarsi is narrow, but shorter than the remaining joints taken together.

27. *Ommata vitticollis*, n. sp.

O. linearis, angusta, nigra; capite angusto, grosse punctato melleo-flavo; thorace elongato antice angustato, supra inæquali, grosse disperse ocellato-punctato, nigro, vitta dorsali et infra melleo-flavis; elytris subintegris, apice obtuse truncatis, passim crebre ocellato-punctatis. Long. $3\frac{1}{2}$ lin. ♀.

Prov. Paraná, Brazil (*coll. W. W. Saunders and H. W. Bates*).

Differs in form from the allied species, the head and thorax being small in proportion to the elytra, and the thorax narrowed anteriorly. The antennæ are three fourths the length of the body, and scarcely thickened towards the tips; the third to sixth joints are linear; they are black, with the exception of the pale bases of joints ninth to eleventh. The femora are distinctly clavate and the hind legs elongated, as in the typical forms of the genus.

28. *Ommata malthinoïdes*, Bates.

Agaone malthinoïdes, Bates, Trans. Ent. Soc. 1870, p. 319.

R. Amazons.

29. *Ommata ruficollis*, Bates.

Agaone ruficollis, Bates, Trans. Ent. Soc. 1870, p. 319.

R. Amazons.

30. *Ommata anoguttata*, n. sp.

O. elongato-linearis, supra plana, subtiliter pubescens, fusca, elytris apice macula transversa flava. Long. 5 lin. ♀.

Prov. Paraná, Brazil (coll. W. W. Saunders and H. W. Bates).

Head fulvo-testaceous, shining, thickly punctured, muzzle elongated; space between the eyes (female) in front moderate; occiput black. Antennæ more than three fourths the length of the body, slightly thickened and serrate towards the tips, joints three to five linear; colour pitchy testaceous, basal joints beneath paler. Thorax elongate cylindrical, disk with four tubercles and a median raised wheal, rest of surface ocellate-punctate, black above, central line and sides fulvous. Elytra elongate-linear and plane, leaving the pygidium uncovered, not deliscent; apex truncate and tumid on the surface where lies the pale transverse spot; the surface rather finely and closely rugose-punctate, with soft, inclined, and curly pubescence; colour brown, suture paler. Body beneath dark brown, with golden pubescence; abdominal segments ringed with yellow. Legs tawny testaceous, base of thighs blackish; hind legs moderately elongated, thighs rather abruptly clavate.

31. *Ommata ægrota*, Bates.

Odontocera ægrota, Bates, Trans. Ent. Soc. 1872, p. 233.

Chontales, Nicaragua.

I described this species as an *Odontocera*, following Lacordaire's definition of the genus; but the closely punctured and non-vitreous elytra bring it within the genus *Ommata*, according to the classification here adopted.

32. *Ommata Xantho*, n. sp.

O. robustior, pallide flava; capite, elytris, tibiis, tarsis femoribusque supra nigris, fronte flava; antennis filiformibus, nigris, articulis 6^o-10^{um} basi pallidis; thoracæ lateribus paulo rotundatis, margine antico crasso, reticulato-punctato opaco; elytris subintegris reticulato-punctatis, apice oblique truncate angulo exteriore longe spinoso; metasterno late nigro-fasciato; pedibus robustis, femoribus elongato-clavatis. Long. 4½ lin. ♂.

Prov. Paraná, Brazil (coll. W. W. Saunders).

A robust species, with hind legs not disproportionately elongated, and filiform antennæ, of which the third to fifth joints are linear.

33. *Ommata pæcila*, n. sp.

O. linearis, pallide flava, thoracis macula dorsali, elytrorum macula

quadrata humerali, fascia mediana alteraque apicali nigris; antennis elongatis, apice gradatim incrassatis, nigris, flavo annulatis; thorace cylindrico, convexo, crebre reticulato-punctato; elytris vix abbreviatis, basi excepta angustatis parallelis, apice oblique truncatis, dense reticulato-punctatis. Long. $4\frac{1}{2}$ lin. ♂.

Prov. Paraná, Brazil (coll. W. W. Saunders and H. W. Bates).

Linear, thorax and elytra closely covered with round punctures forming narrow reticulated interstices. Clear pale yellow, with an irregular spot on the disk of the thorax, a belt across the middle and apex of the elytra, and a square spot on the shoulder black. The antennæ (male) are nearly as long as the body and considerably thickened towards the apex, the third to fifth joints are linear; the colour is black, with the base of fourth to tenth joints and first to fourth joints beneath pale testaceous. Beneath there is a broad stripe on each side of the metasternum and across the abdomen, black. The legs have a streak on the upperside of the femoral clavæ, the apex of the tibiæ and the tarsi black; the hind legs are not elongated; all the femora are clavate, the anterior and middle pair more abruptly so than the posterior. The elytra are moderately narrowed from a little behind the base, and are thence parallel to the apex; they are not dehiscent at the suture; and the external angle of the apical truncature has a longish spine.

A variety occurs in which the middle and apical black fasciæ of the elytra and the humeral spots are united, and the head and whole apical half of the abdomen is black.

34. *Ommata fenestrata*, Lucas.

Oregostoma fenestratum, Lucas, Voyage de Castelnau, Ins. pl. 12. f. 8.

Interior of Brazil.

III. *Legs robust; middle femora abruptly and very thickly clavate; first joint of hind tarsi greatly elongated; elytra entire.* (Agaone, Pascoe).

35. *Ommata notabilis*, White.

Rhinotragus notabilis, White, Cat. Long. Col. Brit. Mus. p. 199.

R. Amazons.

GENUS ODONTOCERA, Serv.

Serv. Ann. Soc. Ent. Fr. 1833, p. 546; Lacord. Genera, vol. viii. p. 503.

I have nothing to add to the definition of this genus given by Lacordaire, except that I think it better to exclude every species which has not a vitreous surface to the elytra. This

character, added to the enlarged metasternum, slender abdomen (often constricted at the base), subcylindrical or oval thorax, and elytra never much abbreviated or subulate, will distinguish *Odontocera* from all the allied genera. The antennæ vary in thickness and length; in most species they are short, thick, and strongly serrated from the sixth or fifth joint; but many have very slender, filiform antennæ. Some of these I formerly placed in the genus *Agaoine*, notwithstanding the slender or constricted abdomen; but this course is the less admissible, as the type of the genus *Odontocera* (*O. vitrea* of Serville) is described as having slender antennæ.

I. *Antennæ elongate, slender.*

1. *Odontocera molorchoïdes*, White.

Rhinotragus molorchoïdes, White, Cat. Long. Col. Brit. Mus. p. 200.

R. Amazons.

2. *Odontocera vittipennis*, n. sp.

O. nigra, cano pubescens; thorace oblongo-ovato, rufo-aurantiaco, reticulato-punctato, opaco; elytris nigris, vitta albo-testacea, vitrea; tarsis posticis albis; antennis elongatis gracilibus, articulis a sexto leviter serratis basi flavo-testaceis. Long. 4 lin. ♂.

Brazil (*coll. W. W. Saunders*).

Head black, clothed with hoary pile; muzzle elongated; eyes (male) nearly touching the median line in front. Antennæ as long as the body, black; joints sixth to eleventh yellow at base, third to sixth linear, seventh to tenth elongate, moderately dilated and serrate at their apices. Thorax rather broader than the elytra, subovate, the sides being much rounded near the middle; the surface is opaque, covered with shallow round pits, and with the flanks light red. The elytra nearly reach the apex of the penultimate segment; they are subparallel from the middle, with tips obliquely and sharply truncated; their surface is very closely and coarsely punctured and deep black, except a narrow well-defined central vitta from the base to near the apex, which is whitish, faintly punctured, and shining. The legs are black, with the exception of the hind tarsi, which are white, and have their basal joint longer than the remaining three together, but not slender; the middle femora are abruptly and very broadly clavate; the hind legs greatly elongated, and their femora very gradually and moderately thickened. The under surface of the body is densely clothed with short hoary pile; the abdomen is moderately slender, and the anterior coxæ scarcely exerted.

3. *Odontocera clara*, n. sp.

O. valde elongata, nigra; thorace aurantiaco-flavo, pectore abdomineque cinereo-tomentosis; elytris disco omnino vitreo albotestaceo. Long. $5\frac{1}{2}$ – $7\frac{1}{2}$ lin. ♂ ♀.

Chontales, Nicaragua (*coll. T. Belt and H. W. Bates*).

An elongate narrow species, similar in form to *O. chrysostetha*, but resembling *O. vittipennis* in colours. Head black, shining, scabrous-punctate; muzzle elongate and narrow. Antennæ long and filiform, moderately serrate from the sixth joint, shining black; extreme base of joints 7 to 11 pallid, especially in the male. Thorax long, cylindrical, gradually narrowed in front, orange-testaceous, moderately shining, closely subreticulate-punctate, with a short, smooth, raised dorsal line on the fore part of the disk. Elytra reaching to the middle of the fourth segment, moderately narrowed behind the base, thence parallel to the apex, which is sharply truncate, with the angles prominent; surface pallid brownish and glassy, faintly punctulate; margins (except the basal) narrowly black and coarsely punctured. Meso- and metasterna and abdomen black, clothed with a laid ashy pile; metasternum moderately voluminous, and abdomen linear, coarsely punctured. Legs much elongated, black, shining; all the femora rather gradually clavate; hind pair reaching the tip of the abdomen.

This is one of the latest discoveries of Mr. Thomas Belt.

4. *Odontocera colon*, Bates.

Agaone colon, Bates, Trans. Ent. Soc. 1870, p. 319.

R. Amazons.

5. *Odontocera monostigma*, Bates.

Agaone monostigma, Bates, Trans. Ent. Soc. 1869, p. 384.

Chontales, Nicaragua.

6. *Odontocera parallela*, White.

Odontocera parallela, White, Cat. Long. Col. Brit. Mus. p. 189.

R. Amazons.

7. *Odontocera mellea*, White.

Odontocera mellea, White, Cat. Long. Col. Brit. Mus. p. 188.

R. Amazons.

8. *Odontocera chrysostetha*, Bates.

Odontocera chrysostetha, Bates, Trans. Ent. Soc. 1870, p. 320.

R. Amazons.

9. *Odontocera vitrea*, Serville.

Odontocera vitrea, Serville, Ann. Ent. Soc. Fr. 1833, p. 547.

Cayenne.

Serville describes the antennæ in his *Odontocercæ* as "filiformes, presque setacées, 5 ou 6 articles en scie." His species would therefore come in the present section.

10. *Odontocera cylindrica*, Serv. l. c. p. 548.

Brazil.

It is not stated in the description that the elytra have vitreous disks; the position of the species is therefore doubtful.

II. *Antennæ more or less abbreviated and dilated.*A. *Thorax narrow, cylindrical.*a. *Disk of thorax even.*

* *Antennæ much thickened towards the apex.*

11. *Odontocera crocata*, n. sp.

O. gracillima, postice attenuata, fusco-niger; antennis, pedibus et elytris fulvo-croceis, his marginibus et apice late nigris, valde abbreviatis, apice late truncatis. Long. $3\frac{3}{4}$ lin. ♂.

Novo Friburg, Rio Janeiro (coll. Dr. Baden and H. W. Bates).

Head coarsely punctured; eyes voluminous, contiguous in front; muzzle moderate, narrow. Antennæ two thirds the length of the body, thickened towards the tip, saffron tawny; third to fifth joints slender, linear, seventh to tenth serrate. Thorax very narrow, cylindrical, with longitudinal patches of shallow circular punctures, the patches connected by transverse wrinkles. Elytra just passing the base of the antepenultimate segment, moderately narrowed from after the base, dehiscent at the suture, sharply and broadly truncated at the apex; surface moderately punctured, very sparsely so on the disk, which is shining. Body beneath rufous tawny; thorax, sides of breast, and belt across middle of abdomen black. Legs saffron tawny; hind pair elongated; thighs distinctly clavate. Metasternum (male) voluminous; abdomen slender, linear.

** *Antennæ robust, all joints thickened.*

12. *Odontocera sanguinolenta* (Dej.), n. sp.

O. elongata, robusta, sanguinea; capite, antennis, vitta thoracis lata dorsali pedibusque nigris; femoribus posticis annulo sanguineo;

elytris fere apicem abdominis attingentibus, angustis, testaceo-flavis, vitreis, marginibus nigris, apice macula oblonga læte flava. Long. 7-8 lin. ♂ ♀.

Rio Janeiro (coll. W. W. Saunders, Dr. Baden, and H. W. Bates).

An elongated and narrow but robust form. Head black, coarsely punctured. Antennæ about half the length of the body, stout, of equal thickness to the apex, third to fifth joints being much dilated, and the following serrated, dull black. Thorax elongated, cylindrical, closely punctured, sides broadly blood-red, the rest dull black. Scutellum white. Elytra reaching nearly the tip of the body, narrow, and nearly parallel from after the base; apex sharply truncated, with angles somewhat produced; surface shining, black, with a central vitta straw-colour and vitreous, the black borders coarsely punctured; an elongate spot brighter yellow at apex. Breast and abdomen sanguineous, the former black in the middle, the latter with margins of the segments black. Legs robust, black; hind femora with a blood-red ring, and gradually clavate.

13. *Odontocera apicalis*, Klug.

Stenopterus apicalis, Klug, Entom. Bras. Specim. alter. p. 54, t. xlv. f. 6.

Brazil.

Apparently allied to *O. sanguinolenta*.

aa. *Disk of thorax tuberculated.*

14. *Odontocera gracilis*, Klug.

Stenopterus gracilis, Klug, Entom. Bras. Spec. alt. p. 54, t. xlv. f. 7.
St. elegans, Guérin-Ménév. Icon. R. A. pl. 44. f. 9.

Brazil.

It has been suggested that this species should be excluded from the genus *Odontocera*, on account of its tubercled thorax, the great length of the peduncle of the hind femora, and other characters. Its peculiar facies and metallic colouring ill consort with the other congeners; but all its essential structural characters are shared in by one or other members of the genus. For instance, the tuberculated thorax is possessed in still higher development by *O. flavicauda*, which has nothing abnormal in its colouring, and quite moderately clavate and pedunculate hind femora.

15. *Odontocera flavicauda*, n. sp.

O. elongata, linearis, castaneo-rufa; capite, antennis basi pedibus-

que nigris; elytris pallide brunneis, vitreis, marginibus anguste nigris, apice flavis. Long. 5-6 lin. ♂ ♀.

Prov. Paraná, Brazil (coll. W. W. Saunders and H. W. Bates).

Elongate and narrow in form. Head coarsely punctured. Antennæ rather more than half the length of the body, not thickened, regularly serrate from the sixth joint; fifth also a little dilated at the apex; basal half black, apical half castaneous. Thorax rather short, cylindrical; surface with four tubercles and a central raised line; interstices with large, circular, scattered punctures. Elytra reaching nearly the base of the pygidium, moderately narrow and subparallel from a little beyond the base; apex broadly sinuate-truncate; surface glassy, although finely and sparsely punctured and setose; margins coarsely rugose-punctate and black; disk pale brown (palest near the base); apex with a longish yellow spot. Beneath shining chestnut-red; thorax blackish; Legs black; hind pair much elongated; thighs abruptly clavate. Abdomen of male slender and linear, of female subpetiolated.

AA. *Thorax subovate.*

a. *Hind legs elongate, slender; femora abruptly clavate.*

16. *Odontocera nigriclavis*, n. sp.

O. elongata, nigra; pedibus posticis (clava femorali seapoque tibiali nigris exceptis) et tarsis omnibus flavo-testaceis; vitta discoidali elytrorum albo-testacea, vitrea. Long. 5-6 lin. ♂ ♀.

Prov. Rio Janeiro and Paraná, Brazil (coll. W. W. Saunders, Dr. Baden, and H. W. Bates).

Closely allied to *O. dispar* (Bates), but having longer elytra, yellow tarsi, and female concolorous with the male, &c. Head with elongated muzzle. Antennæ half the length of the body, thickened from the fifth joint; black, bases of the joints testaceous tawny. Thorax elongate, gradually narrowed behind; surface longitudinally impressed, clothed with long hairs, and closely reticulate-punctate. Elytra reaching to middle of the third segment, nearly parallel from after the base, truncate at the apex, thickly punctured and black on the borders; disk occupied by a whitish vitreous vitta. Legs black; tarsi testaceous yellow; the hind legs moderately elongated; femora abruptly clavate; tibiæ with a dense brush of black hairs round the apical half; base of thighs and of tibiæ testaceous yellow.

17. *Odontocera pæcilopoda*, White.

Odontocera pæcilopoda, White, Cat. Long. Col. Brit. Mus. p. 191.

Amazons.

18. *Odontocera dispar*, Bates.

Odontocera dispar, Bates, Trans. Ent. Soc. 1870, p. 321.

Amazons.

19. *Odontocera aurocincta*, n. sp.

O. valde elongata, nigra; antennis, tibiis et tarsis fulvis; femoribus basi et tibiis posticis dimidio basali albo-testaceis; thorace breviter cylindrico-ovato, grosse punctato, tomento aureo marginato; elytris modice abbreviatis, angustis, apice obtuse truncatis, fulvo-testaceis, vitreis. Long. 7 lin. ♀.

Tehuantepec, Mexico (*coll. H. W. Bates*).

Closely allied to *O. nigriclavis*, but destitute of brush on the hind femora. Head coarsely punctured, black. The antennæ are tawny, moderately short, thickened towards the tips, serrate from the sixth joint. The elytra reach nearly to the middle of the third segment, and are much narrowed but not subuliform, being little dehiscent at the suture and truncated at the tip; they are unicolorous pale tawny brown, with the exception of a narrow blackish line along the anterior part of the suture and of the lateral margins. The underside of the body is closely punctured; it is black, becoming castaneous on the abdomen, the two basal segments of which have a broad pale testaceous belt. The hind legs are moderately elongated, and the femora somewhat strongly clavate. The metasternum is voluminous, and the abdomen very elongate and slender towards the base.

20. *Odontocera leucothea*, n. sp.

O. albicanti (Klug) simillima; differt elytrorum margine suturali late incurvo, maculaque triangulari circumscutellari nigra. Long. 7-9 lin. ♀.

Novo Friburg (Rio Janeiro); Minas Geraes and Paraná. (*coll. W. W. Saunders, Dr. Baden, and H. W. Bates*).

Deceptively similar to *O. albicans*, Klug (Entom. Bras. t. xliv. f. 5); colours the same, except a broad, triangular, black spot in the scutellar region. The silvery pile of the thorax, however, is concentrated in rounded spots, of which there are four (in quadrangle) on the disk, and others more irregular on the flanks; and there are slight differences in the distribution of colours on the antennæ and legs. The white ring of the antennæ in *O. albicans* embraces joints seventh to

ninth; in *O. leucothea* joints sixth, seventh, and the apical half of the fifth. In the anterior legs the femora are chestnut-red, and the tibiæ and tarsi testaceous yellow (in *O. albicans* these colours are exactly reversed); the middle tibiæ and base of the femora are testaceous yellow. Notwithstanding this close general similarity, it is likely the two insects belong to different genera, the antennæ (according to Klug's figure) appearing to be simple, like the typical *Ommate*, and the elytra parallel. In *O. leucothea* the antennæ are serrate from the fifth joint, and the sutural margin of the elytra is strongly incurved from before the middle. The disk of the elytra is vitreous. The abdomen is red, and in the female vespiform.

I have seen four examples, all females, and exactly similar.

21. *Odontocera? albicans*, Klug.

Stenopterus albicans, Klug, Entom. Bras. Specim. alter. p. 53, t. xliv. f. 5.

Rio Janeiro.

aa. *Hind femora gradually thickened.*

22. *Odontocera hilaris*, n. sp.

O. nigra, thorace supra aurantiaco-rufo, elytrorum disco femoribusque posticis basi flavo-testaceis. Long. $4\frac{1}{2}$ lin. ♀.

Odontocera punctata, Bates, Trans. Ent. Soc. 1870, p. 323 (nec Klug).

R. Tapajos, Amazons (*coll. II. W. Bates*).

Short and rather robust. Head with broad and not very elongate muzzle; the eyes in the unique specimen approach tolerably near to the median line in front, and seem to show it to be a male; but the short and broad sessile abdomen is that of a female. The antennæ are short, thickened and serrated from the fifth joint. The thorax is strongly rounded on the sides and constricted at the base, the surface closely reticulate-punctate. The elytra reach nearly to the middle of the third segment, with the suture dehiscient only from the middle, rapidly narrowed but truncated at the apex; the margins are narrowly deep black, leaving the whole disk pallid and vitreous, without visible punctures, except at the base. The hind legs are greatly elongated, the femora very gradually clavate, the tarsi short and slender.

I had erroneously referred this species to *O. punctata* (Klug), with which it agrees in colour and general form; but *O. punctata* (of which I have now an example before me) has longer elytra, with their vitreous disks covered with strong dark punctures. The eyes in the female approach the median

frontal line as closely as in *O. hilaris*; but the hind legs are short and wholly black.

23. *Odontocera punctata*.

Stenopterus punctatus, Klug, Entom. Bras. Spec. alt. p. 53, t. xlv. f. 4.

Bahia (coll. Dr. Baden).

Klug gives the locality as "Pará interior," which is probably an error.

24. *Odontocera ornaticollis*.

Odontocera ornaticollis, Bates, Trans. Ent. Soc. 1870, p. 323.

Tapajos, Amazons.

The abdomen in the male is very elongate, slender at the base, and slightly thickened and curved downwards at the tip.

25. *Odontocera petiolata*, n. sp.

O. elongata, fusco-nigra, pedibus fulvo-testaceis; elytris elongatis modice subuliformibus, apice subacute rotundatis, flavo-testaceis, vitreis, marginibus anguste rufo-castaneis, fasciaque curvata pone scutellum et vittula humerali nigris; abdomine utriusque sexus valde petiolato. Long. 4-7 lin. ♂ ♀.

Novo Friburg, Rio Janeiro (coll. Dr. Baden and H. W. Bates).

Head above and down the middle of the forehead black, the rest tawny testaceous; eyes in male not touching the median line of forehead, in female a little more distant. Antennæ short and stout, black; apex tawny. Thorax ovate, much narrowed behind and convex in front, densely pubescent, coarsely and closely punctured. Elytra reaching nearly to the apex of the penultimate segment, subulate, but not very narrow, parallel from after the base, obtusely pointed at the apex; the vitreous yellowish disk has a few very fine setiferous punctures; a black fascia curves near the base behind the scutellum, and joins on each side a short streak on the top of the shoulder; the margins elsewhere are narrowly castaneous. The legs are moderately stout; the hind thighs not clavate, but gradually and moderately thickened. The petiolated basal segment of the abdomen is partly yellow; the very convex metasternum and margins of the ventral segments are clothed with golden pile.

26. *Odontocera fasciata*, Newm.

Necydalis fasciata, Oliv. Ent. no. 74, p. 10, pl. i. f. 9.

Odontocera chrysozone, White, Cat. Long. Col. Brit. Mus. p. 192, pl. v. f. 5.

R. Amazons.

The abdomen is strongly vespiform, as in the two preceding species.

27. ? *Odontocera Dice*, Newm.

? *Odontocera Dice*, Newm. Entom. p. 91.

Rio Janeiro.

aaa. *Hind legs short and stout ; femora thickly clavate.*

28. *Odontocera triliturata*, Bates.

Odontocera triliturata, Bates, Trans. Ent. Soc. 1870, p. 324.

R. Amazons.

29. *Odontocera compressipes*, White.

Odontocera compressipes, White, Cat. Long. Col. Brit. Mus. p. 191.

R. Amazons.

In this species the hind tibiæ are much dilated exteriorly near the apex and tufted with hairs, evidently an adaptation—the result, combined with colour and shape, being a close imitation of a common yellow species of *Melipona* bee.

30. *Odontocera furcifera*, Bates.

Odontocera furcifera, Bates, Trans. Ent. Soc. 1870, p. 323.

R. Tapajos, Amazons.

In this species the elytra are of the same form as in the typical *Acyphoderes*, *i. e.* subulate and pointed at the apex.

31. *Odontocera simplex*, White.

Odontocera simplex, White, Cat. Long. Col. Brit. Mus. p. 325.

R. Amazons.

32. *Odontocera bisulcata*, Bates.

Odontocera bisulcata, Bates, Trans. Ent. Soc. 1870, p. 326.

R. Tapajos, Amazons.

[To be continued.]

VI.—*Growth or Evolution of Structure in Seedlings.*

By JOHN C. DRAPER, M.D.*

THE continuous absorption of oxygen and formation of carbonic acid is an essential condition of evolution of structure, both in plants and in animals.

The above proposition, so far as it relates to animals, will probably be admitted by all ; the opposite opinion, however, is

* From the 'American Journal of Science and Arts,' vol. iv. November 1872.